

JULY 18, 1983

Plan Formulation Branch
Planning Division

Mr. Paul C. Cahill, Director
Office of Federal Activities (A-104)
Environmental Protection Agency
401 M Street, S.W.
Washington, D. C. 20460

Dear Mr. Cahill:

To complete procedural compliance with the National Environmental Policy Act following final review of the Final Environmental Impact Statement for the Yazoo Area Pump Project, Yazoo Backwater Area, Yazoo Basin, Mississippi, I am sending you this notification letter of issuance of the Record of Decision. A copy of the Record of Decision is enclosed.

Sincerely,

Joseph A. Yore
Colonel, CE
Secretary, Mississippi River Commission

Enclosure

Copies furnished:

Office, Chief of Engineers (DAEM-CWP-C)
Regional Administrator, EPA, Atlanta, GA
Commander, Vicksburg District, ATTN: LNKPE

RECORD OF DECISION
YAZOO AREA PUMP PROJECT REEVALUATION REPORT
YAZOO BACKWATER AREA, YAZOO BASIN, MISSISSIPPI

Decision

I have approved the Reevaluation Report for the Yazoo Area Pump Project which will serve as the basis for design and construction of authorized pumping plant facilities to provide additional flood protection for the Yazoo area. The recommended plan includes a 17,500 cubic-foot-per-second (cfs) pumping plant, an interior channel to route drainage to the pumping plant, and an outlet channel to route the water from the pumping plant to the Yazoo River. Pumping will be initiated when the ponding elevation reaches 80 feet, National Geodetic Vertical Datum (NGVD), during the period 1 March through 30 November and 85 feet, NGVD, during the period 1 December through 1 March.

Alternatives

Several alternative plans were evaluated in the planning process as described below:

(1) Pumping capacities of 10,000, 15,000, and 20,000 cfs were evaluated with pumping of interior ponding beginning at 90 feet NGVD. These plans were eliminated from consideration since none of these alternatives were economically feasible at the current interest rate.

(2) A plan consisting of a 15,000 cfs pumping plant with pumping to be initiated when the interior ponding elevation reaches 85 feet NGVD was evaluated. In addition, approximately 30,000 acres of woodlands would be purchased and developed for the purpose of preserving bottomland hardwoods and increasing fish and wildlife resources. This plan results in net positive fish and wildlife contributions and was designated the Environmental Quality (EQ) plan. Although this plan was environmentally preferable, it was not selected because it was not as economically acceptable as the recommended plan and was not economically justified when evaluated at the current interest rate.

(3) Pumping capacities of 10,000, 15,000, 17,500, 20,000, and 25,000 cfs were evaluated with pumping to be initiated when the ponding elevation reaches 80 feet NGVD during the period March to November and at elevation 85 feet NGVD during the period 1 December to 1 March. This plan of operation provides the best overall operational scheme when considering both flood control and waterfowl impacts. The 17,500 cfs pumping capacity (Recommended Plan) provides the greatest net benefits over cost when evaluated at the current interest rate.

No-Action Alternative

No action was considered as an alternative to structural flood control measures. However, this alternative provides no flood control for the project area and flooding would continue to cause severe economic losses. The net economic benefits which will accrue to the approved project would be forgone.

Rationale for Recommendation

I have approved the selection of Plan C-17,500 as the recommended plan since it provides the best trade-off when considering costs, benefits, energy consumption, and environmental impacts of the plans of the final array. In making my decision, I have considered the overall technical, economic, social, environmental, and policy aspects involved in all formulated plans. I have considered the views of local interests as well as Federal, state, and local agencies. In so considering, I find that the recommended plan through flood damage reduction makes net contributions to the NED objective. The improvements are economically justified, meaningfully address the flood control needs of the study area, and the requirements of local cooperation are appropriate. The recommendation is in compliance with all pertinent statutes for this phase of planning, including Section 404 of the Clean Water Act.

Environmental Protection and Mitigation

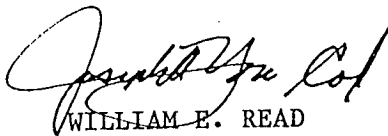
Since this plan does result in net fish and wildlife losses, I have recommended adequate mitigation measures to offset the adverse environmental impacts. The recommended mitigation plan consists of acquisition of 11,300 acres of woodlands in perpetual land use easements or any other combination of easements and fee title that would provide the same level of mitigation. A mitigation report has been forwarded to the Office, Chief of Engineers, for processing to the Congress for authorization. I am convinced that all practical means to avoid, minimize, or offset environmental harm are reflected in this decision and any remaining environmental losses due to the plan are insignificant.

Summary

In summary I find that the recommended action is based on a thorough analysis and evaluation of various practical alternative courses of action for achieving the stated objectives; that wherever adverse effects are found to be involved, they cannot be avoided by following reasonable alternatives; that the action is consonant with national policy, statutes, and administrative directives; that where the project has an adverse effect, this effect is either compensated for or substantially outweighed by other considerations of national policy; and that on balance the total public interest should be served best by its implementation.

Additional copies of this Record of Decision may be obtained from the President, Mississippi River Commission, P. O. Box 80, Vicksburg, Mississippi 39180.

Date: 7 July 83


WILLIAM E. READ

Major General, USA

President, Mississippi River Commission

LMKPD-Y

Yazoo Area Pump Project, Yazoo Backwater Area,
Yazoo Basin, Mississippi

LMKED

LMKPD

18 Jul 83 *BUR 7-18-83*
RUFF/jd/5457

1. The Reevaluation Report for subject project has been approved by the Mississippi River Commission for preparation of necessary design memoranda.
2. A copy of the final report containing correspondence regarding approval is inclosed for your information. Additional copies of the report will be distributed throughout the District by this office.

1 Incl
as

AHLRICH

CF:
LMKDE
LMKPD-Y

RC 2/18
TURNER
LMKPD-Y
XCH 7/18
AHLRICH
LMKPD

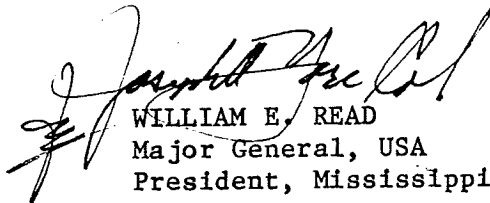
MRCPD-F (VXD 30 Jul 82) 3d Ind
SUBJECT: Yazoo Area Pump Project, Yazoo Backwater Area, Yazoo Basin,
Mississippi

DA, Mississippi River Commission, Corps of Engineers, Vicksburg, MS 39180
07 JUL '83

TO: Commander, Vicksburg District, ATTN: LMKPD-Y

1. The Reevaluation Report for subject project is approved as a basis for preparation of necessary design memoranda.
2. Correspondence regarding approval of the Post Authorization Change Report is attached for your information (Incl 8).

2 Incl
wd incl 6
Added 1 incl
8. as



WILLIAM E. READ
Major General, USA
President, Mississippi River Commission

6 APR 1983

DAEN-CWP

TO INTERESTED PARTIES

Enclosed for your information with the project reevaluation report, is a copy of the Final Environmental Impact Statement (FEIS), and addendum, on the Yazoo Area Pump Project, Yazoo Backwater Area, Mississippi and Louisiana. The FEIS is being filed with the Environmental Protection Agency pursuant to the National Environmental Policy Act of 1969 (NEPA) and regulations of the President's Council on Environmental Quality for implementing NEPA (40 CFR Parts 1500-1508).

Also enclosed is a copy of the Yazoo Backwater Area Fish and Wildlife Mitigation Report, the report of the Mississippi River Commission and the proposed report of the Chief of Engineers. The FEIS and addendum addresses the action proposed by the Chief of Engineers. These documents are currently under review by the heads of Federal agencies and the Governor of the States of Mississippi and Louisiana. Upon receipt of their comments, the report of the Chief of Engineers will be completed and submitted to the Secretary of the Army for transmittal to Congress.

Any questions on the FEIS should be directed to the Office of the Chief of Engineers, ATTN: DAEN-CWP, Washington, D. C. 20314. The official closing date is 30 days from the date on which the notice of availability appears in the Federal Register. This closing date may be somewhat later than 30 days from the date of this letter.

Enclosure

James W. Ray
Colonel, Corps of Engineers
Executive Director, Engineer Staff

CF:
Official File, DAEN-CWP-A
Mississippi River Commission
Dist. Engr. Vicksburg
DAEN-CWM-A (RF)
DAEN-CWP



DEPARTMENT OF THE ARMY

U.S. Army Corps of Engineers
WASHINGTON, D.C. 20314

REPLY TO
ATTENTION OF:

DAEN-CWP-G

29 MAR 1983

SUBJECT: Filing of FEIS - Yazoo Backwater Project, Fish and Wildlife
Mitigation Report

Commander, Vicksburg District ATTN: LMKPD-Y

1. Inclosed for subject FEIS are:
 - a. Interested parties cover letter for local distribution of the FEIS.
 - b. Proposed Chief's Report.
 - c. OCE mailing list for coordination with states and agencies.
2. Please take the following actions to distribute the FEIS.
 - a. Reproduce sufficient copies of the Proposed Chief's Report to accompany the FEIS.
 - b. Contact Mr. Ed Nutter, 202-272-0154, to set a date for concurrent FEIS mailing to local interested parties and filing with EPA.
 - c. Date and reproduce sufficient copies of the interested parties letter to accompany the FEIS.
 - d. Distribute the package (interested parties cover letter - FEIS Proposed Chief's Report) to local interests. We will file the FEIS with EPA concurrently with your distribution. It is assumed that the MRC report will be included in the Main Report/FEIS.
 - e. OCE mailing list is provided to avoid duplication in distribution of FEIS.
3. Please contact Mr. Nutter if you have any questions.

FOR THE COMMANDER:

3 Incl
as

L. H. Blakey
L. H. BLAKEY
Chief, Planning Division
Directorate of Civil Works

CF:
LMNPD



DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON, D.C. 20314

REPLY TO
ATTENTION OF:

DAEN-CWP

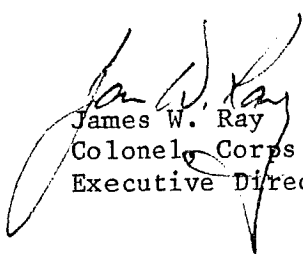
TO INTERESTED PARTIES

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Any questions on the FEIS should be directed to the Office of the Chief of Engineers, ATTN: DAEN-CWP, Washington, D. C. 20314. The official closing date is 30 days from the date on which the notice of availability appears in the Federal Register. This closing date may be somewhat later than 30 days from the date of this letter.

Enclosure


James W. Ray
Colonel, Corps of Engineers
Executive Director, Engineer Staff

*Proposed Report



DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON, D.C. 20314

REPLY TO
ATTENTION OF:

DAEN-CWP-G

SUBJECT: Yazoo Backwater Project, Mississippi - Fish and Wildlife
Mitigation Report

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on the Yazoo Backwater Project, Mississippi - Fish and Wildlife Mitigation Report. It is accompanied by the reports of the Mississippi River Commission and the Vicksburg District Engineer. These reports were prepared in accordance with the Fish and Wildlife Coordination Act of 1958, Public Law 85-624.

2. The District Engineer's report covered mitigation requirements for the completed Yazoo Area and Satartia Area levees and for the proposed Yazoo Area Pumping Plant. The District Engineer recommended the purchase of 40,000 acres in perpetual land use easements or any other combination of easements and fee title that would provide the same level of mitigation.

3. The Mississippi River Commission concurred in part with the findings and recommendations of the District Engineer. The Commission concluded that the recommended plan should be limited to those measures necessary to mitigate losses attributable to the proposed pumping plant. This would require the purchase of 11,300 acres in perpetual land use easements at a cost of \$4,992,000 based on October 1982 price levels or any other combination of easements or fee title that would provide the same level of mitigation. Under traditional cost sharing, all costs would be apportioned in the same manner as those for the basic project purpose which is flood control. In arriving at its conclusion the Commission recognized that approximately 80,650 acres of woodland are already in the Federal ownership within the vicinity of the project area and will remain available for serving fish and wildlife needs.

4. I generally concur in the recommendation of the Mississippi River Commission, subject to such modifications as in the discretion of the Chief of Engineers may be advisable, and subject to cost sharing and financing arrangements which are satisfactory to the President and the Congress.

J. K. BRATTON
Lieutenant General, USA
Chief of Engineers

*This report contains the proposed recommendations of the Chief of Engineers.
The recommendations are subject to change to reflect substantive comments.

DAEN-CWP-G (MRCPD, 24 Nov 82) 1st Ind
SUBJECT: Yazoo Area Pump Project, Yazoo Backwater Area, Yazoo Basin,
Mississippi - Post Authorization Change Notification Report

HQ, U.S. Army Corps of Engineers, Washington, D.C. 20314

3 FEB 1983

TO: President, Mississippi River Commission


1. The subject Post Authorization Change Notification Report and the recommended post authorization change (PAC) is approved. Approval is granted recognizing that the change in scope/scale of the pump plant in terms of capacity is 25 percent; the change in project location is insignificant; the differences in costs and benefits between the authorized and recommended plan are less than 25 percent; and, there are no changes in project purposes.

2. Approval authority and filing of the final environmental impact statement (EIS) for the reevaluation report is delegated in accordance with ER 1105-2-10, paragraph 1-5a(3). Also, I have reviewed requirements for filing the EIS for those AE&D actions requiring OCE approval (see ER 200-2-2, para. 3d) in view of our approval of the PAC; and, have determined that it is appropriate for the MRC to file the EIS in this specific case.

3. We are considering the Mississippi River Commission's report on fish and wildlife mitigation and will dispatch the proposed Chief of Engineers' report to States and agencies in the near future.

FOR THE COMMANDER:

wd all incl


JOHN F. WALL
Major General, USA
Director of Civil Works



DEPARTMENT OF THE ARMY
MISSISSIPPI RIVER COMMISSION, CORPS OF ENGINEERS
VICKSBURG, MISSISSIPPI 39180

ADDRESS REPLY TO:

PRESIDENT, MISSISSIPPI RIVER COMMISSION
CORPS OF ENGINEERS
P. O. BOX 80
VICKSBURG, MISSISSIPPI 39180

MRCPD

24 November 1982

SUBJECT: Yazoo Area Pump Project, Yazoo Backwater Area, Yazoo Basin,
Mississippi - Post Authorization Change Notification Report

CDR USACE (DAEN-CWP)
WASH DC 20314

1. The subject project was authorized by the Flood Control Act approved 18 August 1941 in accordance with the 7 March 1941 report by the Mississippi River Commission, which is printed in House Document 359, 77th Congress. The authorized project included levees, drainage structures, and pumping plants. In a 2 April 1962 report on the review of the Mississippi River and Tributaries Project, the Chief of Engineers stated that the existing project authorization was sufficiently broad to permit selection of locations and capacities of pumping plants as future developments dictate. The selection would be made after study, within present authorizations, to determine economic justification.
2. The Vicksburg District initiated advance engineering and design activities in 1977 and has submitted a reevaluation report for approval. A Post Authorization Change Notification Report (PAC) has been prepared in accordance with ER 1105-2-10 and is submitted for your approval (Incl 1). Copies of the reevaluation report are inclosed for your use (Incl 2).
3. The District Commander's report on fish and wildlife mitigation, which would require Congressional approval, is scheduled to be reviewed by the Mississippi River Commission on 16 December 1982. I cannot address the issue at this time, however it is anticipated that a Commission report on the fish and wildlife mitigation aspects of the project will be submitted to the Chief of Engineers by 31 December 1982.

2 Incl
as (8 cy)

WILLIAM E. READ
Major General, USA
President, Mississippi River Commission

LMKPD-Y (30 Jul 82) 2d Ind

SUBJECT: Yazoo Area Pump Project, Yazoo Backwater Area, Yazoo Basin,
Mississippi

DA, Vicksburg District, Corps of Engineers, Vicksburg, MS 39180 10 Nov 82

TO: President, Mississippi River Commission, ATTN: MRCPD-F

1. Appropriate portions of the reevaluation report for subject project have been revised in response to 1st Ind comments. Copies of the revised report are provided as Incl 6. Minor revisions have been made to the Post Authorization Change Report (PAC) based on informal comments furnished by MRCPD-F. A copy of the revised PAC report is provided as Incl 7. Responses to comments on the reevaluation report are addressed below.

2. Responses presented in the following subparagraphs are addressed in the same order as comments presented in the 1st Ind.

a. Concur. The report has been revised as suggested.

b. (1) Energy costs contained in this paragraph were based on Mississippi Power and Light rate schedule C-18 dated 1 July 1980. Fuel adjustment costs were not included in these costs because the fuel adjustment was expected to be a small percentage of the total cost for supplying energy to the pumping plant. Typically, a large portion of the cost for fuel is accounted for in the base rate of the rate schedule, with fuel adjustment credits or debits added to account for the total cost of fuel. Although a Mississippi Power and Light rate schedule was used in estimating the energy cost, Yazoo Valley Electric Power Association will actually be supplying power to the pumping plant. Based on the Yazoo Valley Electric Power Association rate, annual energy costs would be \$734,000 for the recommended plan. Although these rates are cheaper, recommend that subject report not be revised to reflect these rates. Due to the instability of energy costs, this difference in rates could diminish or even reverse in time. Energy costs during detailed design will reflect current rates applicable to the site.

(2) The selection of electric motor prime movers was for analysis purposes only and was not intended to limit consideration of other types of prime movers during the design phase. In this light, utilization of the higher MP&L rates for comparison purposes might be more realistic or more convincing if electric motor prime movers are chosen for economic reasons over fossil fuel movers.

c. Concur. The report has been revised as suggested.

d. Concur. The report has been revised to state: "The pumping will be accomplished in increments equivalent to the optimum pump size, which will be determined in detailed design, and increased in like increments."

LMKPD-Y (30 Jul 82) 2d Ind 10 Nov 82

SUBJECT: Yazoo Area Pump Project, Yazoo Backwater Area, Yazoo Basin,
Mississippi

e. Concur. A determination will be made in subsequent design documents pertaining to the availability and suitability of construction materials from the inlet and outlet channels or from additional sources. The boring program for the Feature Design Memorandum will provide the physical data required to make the determination.

f. Real estate costs have been confirmed by LMKRE-E and a record of this has been furnished LMKRE-E. Updated real estate estimates have also been provided by LMKRE-E. The report has been revised to reflect 25 percent contingencies for lands and damages.

g. Concur. The report has been revised as suggested.

h. Concur. The report has been revised to state: "A March 1976 detailed analysis for pumping stations in the Vicksburg District (Lake Chicot) showed that electricity is less expensive and more reliable than diesel fuel."

i. The increase in stages resulting from pumping 17,500 cfs at a river stage of about 81 feet, NGVD, would be approximately 0.5 foot and 0.7 foot at the Vicksburg Canal gage and mouth of the Steele Bayou gage, respectively. However, there are essentially no farmlands in this area located below elevation 85. In addition, since small stage increases on the rising leg of the flood hydrograph do not appreciably affect the duration of flooding, only increases in peak stages would produce significant damages. Conditions which could increase peak stages as much as 0.5 foot on farmland are possible but unlikely, and did not occur within the 28-year period of record evaluated. The maximum increase in peak stages on farmland during the period of record would have been about 0.3 foot; therefore, to clearly state the probable increases, the following statement has been added after the first sentence of paragraph 70: "The maximum possible increase in stage in this area would be about 0.7 foot and would occur below flood stage. From the routing results and rating curves, it is estimated that the maximum increase in peak stages on farmland in this area would be about 0.3 foot."

j. Concur. The geologic sections presented in this report were developed from available boring data from other projects. These sections represent the best geologic sections that could be assimilated at the original preparation date for this report. In the future, geologic sections will be developed from boring data that are at or nearer the project site than these borings.

k. Concur. The referenced boring logs will be included in any subsequent reports. The difference between the "foundation" borings and "borrow" borings is basically a function of their location, as some of the boring data were derived from other projects in the area of interest.

LMKPD-Y (30 Jul 82) 2d Ind 10 Nov 82
SUBJECT: Yazoo Area Pump Project, Yazoo Backwater Area, Yazoo Basin,
Mississippi

1. Concur. In subsequent studies, proper consideration will be given to selecting the most cost-effective route for the outflow channel.

2. The Mississippi Power and Light rate information contained in this paragraph was effective 1 July 1980. The current Yazoo Valley Electric Power Association rate schedule is approximately 25 percent less than MP&L rates due to the quoted 25 percent discount as noted below and is as follows:

Demand	@ \$4.50/kW
Energy	@ \$0.05/kWh
Less	25% Discount
Plus Fuel Cost Adjustment	@ \$0.08382 kWh

FOR THE COMMANDER:

- 2 Incl
- wd incl 5
- Added 2 incl
- 6. Revised Reevaluation Report
(45 cy; 5 cy fwd sep)
- 7. PAC Notification Report

V. C. AHLRICH
Chief, Planning Division

CF:
LMKPD-Y

[Signature]
TURNER
LMKPD-Y

[Signature]
ASHLEY
LMKPD-E

[Signature]
PEARSON
LMKRE

[Signature]
PENLEY
LMKED
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AHLRICH
LMKPD



DEPARTMENT OF THE ARMY
VICKSBURG DISTRICT, CORPS OF ENGINEERS

P. O. BOX 60

VICKSBURG, MISSISSIPPI 39180

REPLY TO
ATTENTION OF:

JUL 30 1982

LMKPD-Y

SUBJECT: Yazoo Area Pump Project, Yazoo Backwater Area, Yazoo Basin,
Mississippi

President
Mississippi River Commission
ATTN: MRCPD-F

1. The Final Reevaluation Report - Environmental Impact Statement for subject project is forwarded for your action. Also inclosed is the Post Authorization Change (PAC) Notification Report and summaries of the 10 July 1979 and 6 April 1982 public hearings.
2. The Fish and Wildlife Mitigation Report for the Yazoo Area Pump Project and Yazoo Area and Satartia Area Backwater Levee Projects is being transmitted by separate correspondence.
3. Recommend subject Reevaluation Report be approved and Phase II studies initiated.

DENNIS J. YORK
Colonel, Corps of Engineers
Commanding

- 4 Incl
1. Reevaluation Report
(45 cy; 40 fwd sep)
 2. PAC Notification Report
 3. Summary of 10 Jul 79
Public Meeting (4 cy)
 4. Summary of 6 Apr 82
Public Hearing (4 cy)

MRCPD-F (VAD 30 Jul 82) 1st Ind
SUBJECT: Yazoo Area Pump Project, Yazoo Backwater Area, Yazoo Basin,
Mississippi

DA, Mississippi River Commission, Corps of Engineers, Vicksburg, MS 39180
19 Oct 82

TO: Commander, Vicksburg District, ATTN: LMKPD-Y

1. The subject report should be revised to address the following comments:

a. Page 14, first para. The last sentence is misleading as stated and should be restated as follows: "The Mississippi River Project Design Flood is considered, by definition, to be a flood whose magnitude is approximately that of the Standard Project Flood (SPF) (see Appendix C)."

b. Page 40, Energy Analysis para. In this paragraph the annual energy costs and anticipated rate increase are given, but no mention is made of any fuel adjustment for the present or future. Fuel adjustments should be addressed either in the report or letter of transmittal. Additionally, all energy is measured in kWh, which would lead one to believe that a decision has already been made that this station will be electrically powered and no other form of energy will be considered. Prime movers will be decided during the design phase, not in the planning phase.

c. Page 51, Pumps para, and Page EIS-3, first para. The third sentence is not accurate. Flooding conditions below 80 ft, NGVD, would be changed with the use of pumps. The depths and durations (both of which are parameters of flooding conditions at any elevation) of flooding would be changed. If something is required to be said concerning the area below 80 ft, NGVD, it would be accurate to say that the frequency of flooding below that elevation would be unchanged.

d. Page 51, Pumps para. In this paragraph, the statement is made that: "The pumping will be accomplished in increments of about 1,000 to 2,000 cubic feet per second and increase in like increments... The use of this size of pumps will not lend itself to full utilization of the station or the equipment, nor allow competition of manufacturers of equipment. The optimization of pump size should be determined during detailed design and should be based on economic and hydraulic requirements.

e. Page 52, Construction Material Sources. Reference second sentence. Other sources of materials should be addressed or a determination made that a sufficient quantity of material is available from the inlet and outlet channels.

f. There is no record in LMKRE-E that the real estate costs shown in Table 8, page 53, Volume 1, Reevaluation Report, were provided by LMKRE-E. There is also no record of a real estate update by the same source. Updating of real estate estimates by ENR is not acceptable. Contingencies on lands and damages are mandated at 25% rounded to the nearest one thousand.

MRCPO-F (VXD 30 Jul 82) 1st Ind 19 Oct 82
SUBJECT: Yazoo Area Pump Project, Yazoo Backwater Area, Yazoo Basin,
Mississippi

g. Page EIS-9, fifth para. In the last sentence, the same type of statement is made as that which was commented upon in para c above, with the exception that the referenced elevation is 85 ft, NGVD.

h. Page B-7, para 21c. The reference to the "most recent" analysis should date the study as March 1976. Note that many changes have transpired since that time.

i. Page C-17, para 70. The recommended plan requires the pumps to start operating when the interior stages exceed elevation 80 ft NGVD during the period 1 Mar-1 Dec each year; however, it is not clear when all units go into operation. Based on 1974 hydrograph on Page C-15, the pump capacity would have reached 17,500 cfs on May 29 with a river stage between elevations 81 and 82 NGVD. This would be the time of year when farming operations along the Yazoo River near the Long Lake area would be most affected by an increase in river stage. The District should ensure the 17,500 cfs increase in flow in the Yazoo River at this stage will not raise stages more than 0.4 ft stated in para 69.

j. Plates D-1 through D-4. At their nearest point, the geologic sections are located a mile from the pumping station sites under study. As a result, the data shown on the sections on plates D-3 and D-4 are of limited use. Sections should have been selected at or near the sites.

k. Plate D-5. The logs of all borings shown in plan on this plate should be included in subsequent report. The applicability of the legend for this project should be checked. The "borrow pit" borings are as deep as "foundation" borings and some of these would seem to be useful as foundation borings.

l. Appendix D, General. Site selection studies are discussed briefly. In subsequent studies, consider reducing the cost of the outflow channel by selecting a more direct route to the Yazoo River.

m. Page E-3, para 12. The power costs were computed from Mississippi Power and Light rates, however, the area of the station is served by Yazoo Valley Electric Power Association, whose rates may be different from the quoted rates. The rates should be obtained from the Yazoo Valley Electric Power Association. It is further noted that no allowance was made for the fuel adjustment factor. You should document why this factor has been omitted. In the past, the costs for electricity were significantly influenced when adjusted for this factor. If the use of this factor is still required, the costs of electric power for these pumps should be recalculated and the results then reflected in the report.

n. Additional comments are marked in red in the attached copy of the report.

ERCPD-F (VXB 30 Jul 82) 1st Ind 19 Oct 82
SUBJECT: Yazoo Area Pump Project, Yazoo Backwater Area, Yazoo Basin,
Mississippi

2. The requirements of para 17 of EC 1110-2-193, dated 20 April 1979 should be reviewed so that the recommended schedule for field conferences can be achieved.

FOR THE PRESIDENT OF THE COMMISSION:

1 Incl
wd all cy incl 1-4
Added 1 incl
5. Marked-up cy
Reevaluation Rpt

FRED H. BAYLEY III
Chief, Planning Division

YAZOO AREA PUMP PROJECT
POST AUTHORIZATION CHANGE
NOTIFICATION REPORT

FLOOD CONTROL
MISSISSIPPI RIVER AND TRIBUTARIES
YAZOO BASIN
YAZOO BACKWATER AREA, MISSISSIPPI

JULY 1982
Revised November 1982

2nd

YAZOO AREA PUMP PROJECT
POST AUTHORIZATION CHANGE
NOTIFICATION REPORT

1. Description of Authorized Project.

a. The authorized project for the Yazoo Backwater Area included a levee along the west bank of the Yazoo River from the Mississippi River Levee to a junction with the Yazoo River Headwater Levee in the vicinity of Yazoo City, Mississippi; a drainage structure at Little Sunflower River; and combination drainage structures and pumping plants at Big Sunflower, Deer Creek, and Steele Bayou with a total pumping capacity of 14,000 cubic feet per second (cfs).

b. The capacities of the three pumping stations were to be 11,000 cfs at the Sunflower River, 700 cfs at Deer Creek, and 2,300 cfs at Steele Bayou. By closing the drainage structures when the Yazoo River reached elevation 80 feet, National Geodetic Vertical Datum (NGVD), the pumping capacity of 14,000 cfs would prevent the ponding elevation from rising above 90 feet, NGVD, more often than once in 5 years.

c. The local cooperation requirements consisted of assurances to maintain the levees in accordance with Section 3 of the Flood Control Act of 15 May 1928 and not raise the levees in the backwater above the limiting elevations established therefor by the Chief of Engineers.

2. Authorization.

a. The project was authorized by Section 3 of the Flood Control Act approved 18 August 1941 (Public Law 77-228), which states in part:

(b) The project for flood control of the Yazoo River shall be as authorized by the Flood Control Act approved June 15, 1936, as amended, by Section 2 of the Act approved June 28, 1938, except that the Chief of Engineers may, in his discretion, from time to time, substitute therefor combinations of reservoirs, levees, and channel improvements; and except that the extension of the authorized project and improvements contemplated in Plan C of the report of March 7, 1941, of the Mississippi River Commission is authorized.

b. The 7 March 1941 report by the Mississippi River Commission which is printed in House Document 359, 77th Congress, reads in part as follows:

Plan C . . . protecting Yazoo Backwater . . . with headwater plan in operation, Sunflower River dammed by backwater levee, and all drainage pumped . . . This plan again assumes that pumps of about 14,000 cubic feet per second capacity would be provided to prevent the sump level from exceeding 90 feet, mean Gulf level, at average intervals of less than 5 years.

Due to the small amount of cleared land below contour 90 there does not seem to be much advantage in holding the sump to lower levels. . . .

3. History of Project.

a. Although levees, channel work, and pumps were authorized by the Flood Control Act approved 18 August 1941, both World War II and the Korean War occurred during the time this work would have been accomplished. In 1954, Congress directed the Chief of Engineers to review all Mississippi River and Tributaries Projects to determine if modifications were needed. This review was completed in 1959 and the Chief of Engineers recommended modification of several projects, including the Yazoo Backwater Project. The major modifications to the Yazoo Backwater Project were deletion of the Big Sunflower and Deer Creek drainage structures, the inclusion of a 27-mile connecting channel between the Little Sunflower and Steele Bayou drainage structures, and the deferral of construction of pumping plants until some future time, with the number, location, and size of the pumps to be determined if and when future conditions and economic justification warranted installation.

b. The levee (constructed to interim grade based on 1956 flow lines) and drainage structures were completed in December 1977 and protect the area from Mississippi River backwater floods. However, ponding of runoff from the delta presents a severe flooding problem when the Steele Bayou and Little Sunflower drainage structures are closed due to prolonged high stages on the Mississippi River. A reevaluation of the proposed pumping plant was initiated in 1978 to determine the best plan for reducing flood damages in the Yazoo Area caused by ponding of runoff.

4. Funding Since Authorization. Funding allocations for reevaluation studies are provided below.

<u>Fiscal Year</u>	<u>Amount</u> <u>(\$000)</u>
1979	375
1980	235
1981	190
1982	<u>150</u>
TOTAL	950

5. Changes in Scope of Authorized Project. The recommended plan will provide flood protection to those additional lands which have been converted to agricultural production since initial authorization. Records show that at the time of authorization 20 percent of the project area was cleared but only 2 percent of those lands below the 90-foot contour was cleared. Land use data developed in 1978 show that approximately 74 percent of the 539,000-acre project area is now cleared, including 59,000 acres or 43 percent of the lands below elevation 90 feet. The following tabulation provides a comparison of the authorized plan with the recommended plan.

<u>Item</u>	<u>Authorized Plan</u>	<u>Recommended Plan</u>	<u>Percent of Change</u>
Pump Capacity (cfs)	14,000	17,500	25
Elevation Pumping Initiated (ft, NGVD)	80	80 ^{a/}	N/A
Elevation of 5-Year Frequency Flood (ft, NGVD)	90	88	N/A

a/ Pumping initiated at elevation 85 feet, NGVD, 1 December to 1 March.

6. Changes in Project Purpose. There are no changes in project purpose.

7. Changes in Local Cooperation Requirements. There are no changes in local cooperation requirements.

8. Changes in Location of Project. The recommended plan consists of a single pumping plant located approximately 0.8 mile west of the Steele Bayou drainage structure rather than three separate pumping plants at Big Sunflower River, Deer Creek, and Steele Bayou as proposed in the authorized plan. The connecting channel completed in 1977 between the Big Sunflower and Little Sunflower Rivers and Steele Bayou intercepts flow from all of the tributaries within the project area. This makes possible the utilization of the single pumping plant rather than a separate pumping plant at the mouth of each tributary. The construction of a single pumping plant is less costly and requires less right-of-way.

9. Design Changes. The capacity of the authorized pump project was increased to 17,500 cfs based on the reevaluation of existing problems and needs in the area. Significant land use changes have taken place in the project area since authorization. Currently, approximately 74 percent of the project area is cleared and in agricultural production as compared with 20 percent in 1941. This increase in agricultural lands provides the basis for the increase in pumping capacity.

10. Changes in Total Project Costs.

a. Costs for the recommended plan, as presented in the Reevaluation Report and updated to March 1982 price levels, are presented in Table 1. Costs for the authorized plan are not available for comparison since the project document presented only the total first cost for the total project which included levees, channels, and drainage structures in addition to pumps. Costs reported to Congress included all authorized features of the Yazoo Backwater Project, and costs for the pump project were not separable.

TABLE 1
COST OF RECOMMENDED PLAN

Item	: Reevaluation Report : : (October 1980) :	Current (March 1982)
01 Lands and Damages	\$3,038,000	\$3,038,000
02 Relocations	1,074,000	1,299,500
09 Channels and Canals	4,588,000	5,552,000
13 Pumping Plant	110,526,000	133,736,500
30 Engineering and Design	17,428,000	19,850,500
31 Supervision and Administration	13,361,000	15,218,200
Total	\$150,015,000	\$178,700,000

b. Increases in the cost of the authorized pump plan would result due to an increase in price levels, the increase in size from 14,000 cfs to 17,500 cfs, and the addition of mitigation features to the recommended plan.

11. Changes in Project Benefits. Benefits for the recommended plan, as presented in the Reevaluation Report and updated to March 1982 price levels, are presented in Table 2. Benefits for the authorized plan are not available for comparison since no benefit data were presented in the project document. Increases in benefits would result from an increase in price levels, the increase in pump size, and the increase in agricultural development in the project area since authorization.

TABLE 2
ECONOMIC SUMMARY

Item	: Reevaluation Report : : (October 1980) :	Current (March 1982)
Total Annual Project Benefits	\$21,346,000	\$26,139,000
Total Annual Project Costs	6,633,000	7,771,000
Excess Benefits	\$14,713,000	\$18,368,000
Benefit-cost Ratio	3.2	3.4

12. Benefit-Cost Ratio. The benefit-cost ratio for the recommended plan is 3.4 based on March 1982 price levels. The recommended plan was evaluated using a project interest rate of 2-1/2 percent which is in accordance with Section 80 of Public Law 93-251, 7 March 1974. The recommended plan has a benefit-cost ratio of 1.4 when evaluated at the current discount rate of 7-5/8 percent and is the NED Plan. No benefit-cost ratio could be computed for the authorized plan since the project document contained no benefit data.

13. Changes in Cost Allocation. There are no changes in cost allocation.
14. Changes in Cost Apportionment. There are no changes in cost apportionment.
15. Environmental Considerations in Recommended Changes.

a. The increase in scope of the project will result in some additional environmental losses since flooding will be reduced to a greater extent; however, other features included in the recommended plan will reduce environmental losses. The change in design from three pump stations to a single pump station will result in fewer rights-of-way requirements and a reduction in the loss of wildlife habitat. In addition, the recommended plan includes a feature not included in the authorized plan which allows pumping to be initiated at elevation 85 feet, NGVD, rather than elevation 80 feet, between 1 December and 1 March. This modification in operation greatly reduces project-related waterfowl losses while providing essentially the same flood control benefits.

b. A Draft Environmental Impact Statement has been prepared, coordinated, and processed in accordance with ER 200-2-2. The Draft EIS was filed with EPA on 1 March 1982. Comments received on the draft have been incorporated into the final EIS which is currently being reviewed.

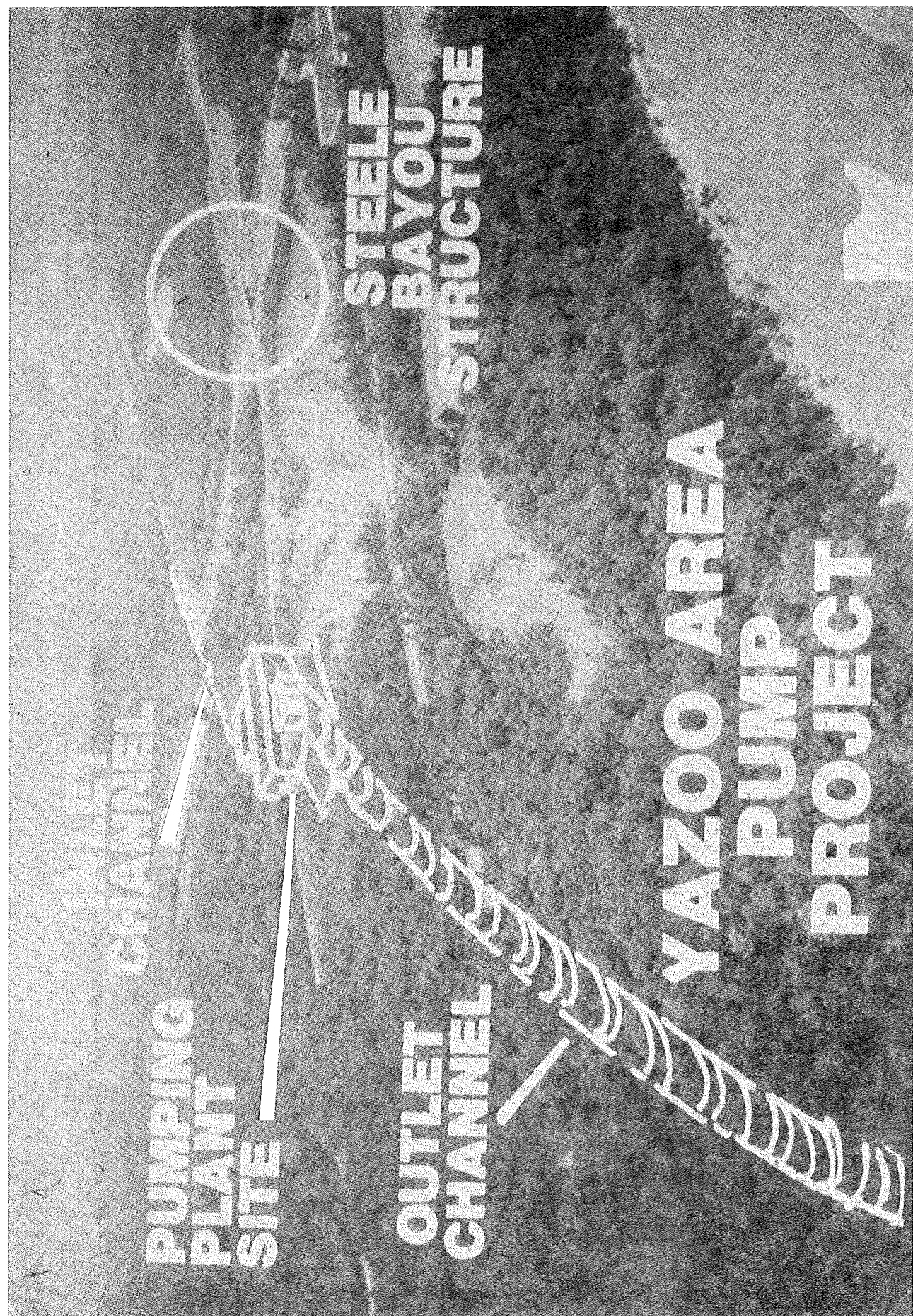
c. A Fish and Wildlife Mitigation Plan has been developed in combination with the recommended pump plan. This plan includes the acquisition of 6,500 acres in perpetual land use easements or any other combination of easement and fee title that would provide the same level of mitigation for the pump plan and 33,500 acres for the Yazoo and Satartia Area Levee Projects. This acquisition, in combination with previous mitigation measures such as the Muddy Bayou Control Structure constructed at Eagle Lake and the greentree reservoirs authorized and under construction to provide improved waterfowl habitat in the Delta National Forest, will offset the losses resulting from the existing Yazoo Area and Satartia Area Levee Projects as well as the proposed Yazoo Area Pump Project. Implementation of the mitigation plan will be contingent upon Congressional authorization.

16. Public Involvement.

a. Throughout the course of the reevaluation study, key Federal and state agencies have been kept informed of plan development. These agencies included U. S. Fish and Wildlife Service, Environmental Protection Agency, Soil Conservation Service, U. S. Forest Service, and Mississippi Departments of Natural Resources and Wildlife Conservation. Two public meetings have been held during the reevaluation study. A formulation stage public meeting was held in Vicksburg, Mississippi, on 10 July 1979 to present the alternatives developed for the area and solicit public views and comments. Prior to the meeting, a public meeting notice was distributed to over 1,200 people and coverage was provided by the news media. In addition, an information summary of the project was mailed prior to the meeting and distributed to the approximately 500 people present at the public meeting.

b. In addition to nine resolutions received prior to the public meeting, comments from 293 individuals, plus 6 petitions containing 660 signatures, were received during and after the public meeting. It was determined that the majority of the people (88 percent) favored the building of pumps. Opposition stemmed from environmental concerns. Many of the responses concerned the need for project mitigation. The most preferred type of mitigation was land use easements; fee title from willing sellers was the next most preferred method.

c. A final public meeting was held in Rolling Fork, Mississippi, on 6 April 1982 to present the recommended plan to the public. Prior to the meeting, an information summary-public meeting notice was distributed to approximately 1,700 people and coverage was provided by the news media. Approximately 300 people attended the meeting. Prior to, during, and after the meeting, comments were received from 180 individuals. Of those responding, approximately 94 percent favored the recommended pump plan while only 6 percent opposed the installation of pumps. Opposition again stemmed primarily from environmental concerns. Of those responding regarding mitigation, the majority favored land use easements acquired for the life of the project.



**INLET
CHANNEL**

**PUMPING
PLANT
SITE**

**OUTLET
CHANNEL**

**STEELE
BAYOU
STRUCTURE**

**YAZOO AREA
PUMP
PROJECT**